

### **CH-012 Transistor Curve Tracer Adapter for OSC**

This board has to be used with analog or digital oscilloscope which can display the signal in x-y mode, it is designed to has 2 ranges of  $I_b$  to bias 2 types of transistor , Small transistor / Power transistor and requires dual power supply +15V and -15V, due to main of components are op-amp which need dual supply to operate

#### **Technical information.**

- Require Power supply +15VDC/-15VDC (1A )
- Capable to check IV curve both NPN / PNP Power Transistor / Small Transistor
- 8 step  $I_b$  0uA,24uA,48uA,72uA,96uA,120uA,144uA,168uA for small transistor
- 8 step  $I_b$  0.0mA,0.32mA,0.64mA,0.96mA,1.28mA,1.6mA,1.92mA,2.24mA,
- $V_{ce}$  = +10V for NPN and -10V for PNP
- Switching frequency 642Hz
- 2 Jumper to select ranges of  $I_b$  and type of transistor { NPN / PNP }
- hole PCB for wiring to external 2 way switches to select ranges of  $I_b$  and type of transistor
- Require 2 CH Analog or Digital Oscilloscope in x-y mode to connect both CH to this adapter board ( CH1 is X-Axis and CH2 is Y-Axis )
- PCB size 9.0cm x 10.0cm

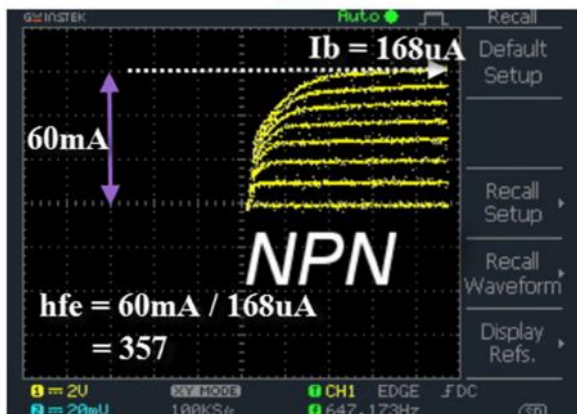
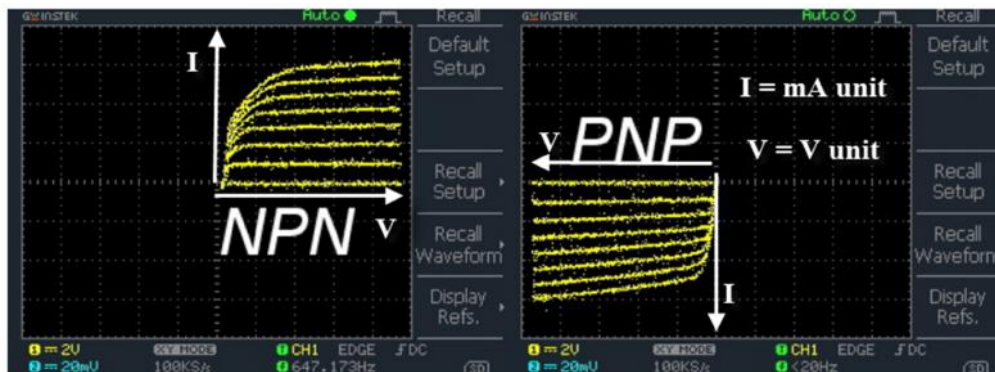
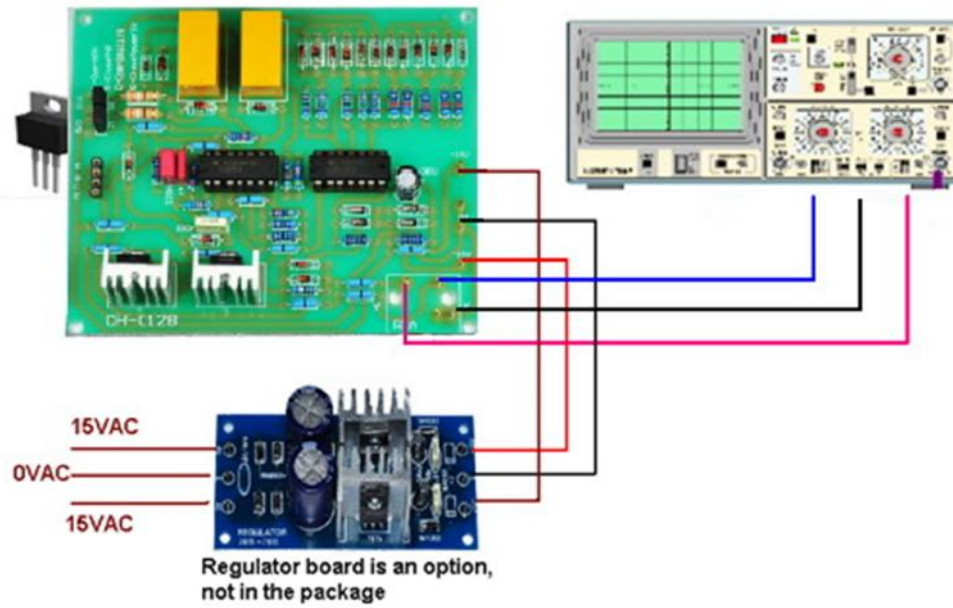
#### **How to setup**

- Switch on OSC
- Connect X to CH1 of OSC and Y to CH2 of OSC
- Connect dual power supply to the board { don't swop between +15V and -15V }
- Set time base of OSC to 500us to 1ms
- Volt per DIV of CH1 = 2V / DIV
- Volt per DIV of CH2 = 20-100mV / DIV
- Put jumper to be suitable with your transistor NPN/PNP , first start with small transistor range .
- Put transistor on test DUT socket, please put correct pin E , C , B. Don't swop
- Power on the IV curve tracer board
- If no graph or you see only a few IV curves, this means that  $I_b$  are not enough. Change jumper to select power transistor

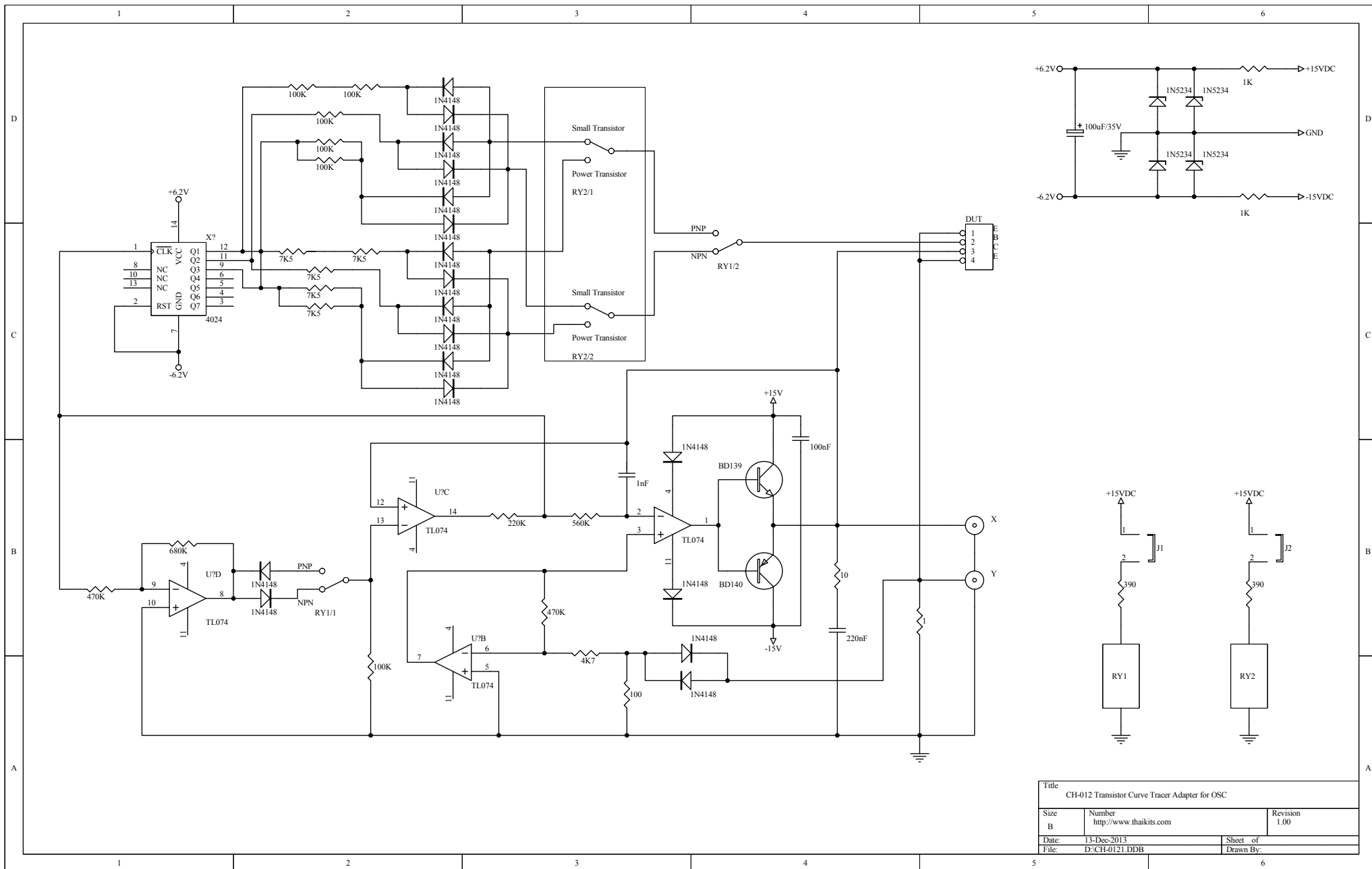
Warning : Don't select between NPN / PNP during transistor is on the test DUT. Transistor maybe damaged.

**Note** : Please ignore RCA connector on PCB layout. We stopped to use this RCA connector since 2014. So, No RCA connector in this kit.

### Diagram how to set-up



Example how to calculate hfe of transistor



Title CH-012 Transistor Curve Tracer Adapter for OSC		
Size B	Number <a href="http://www.thaikit.com">http://www.thaikit.com</a>	Revision 1.00
Date: 13-Dec-2013	Sheet of 1	
File: D:\CH-012.DDB	Drawn By: 	